

Clean Copy of the Amended Claims

~~22 Bulk H15 (amended). A cell line producing the monoclonal antibody of claim 25.~~

~~8 (twice amended). The immunoassay of claim 26, wherein the non-competitive immunoassay is carried out in either a one-step or a two-step incubation procedure.~~

Clean Copy of New Claims

25 (new). A monoclonal antibody or recombinant antibody fragment having the capability of binding a human gamma-carboxylated osteocalcin fragment, said monoclonal antibody or recombinant antibody fragment has the specificity to epitopes that have been identified on said gamma-carboxylated fragment of osteocalcin, said osteocalcin fragment selected from the group consisting of

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i) a fragment which spans from amino acid in position 7 to amino acid in position 30 of the amino acid sequence set forth in SEQ ID NO:2 in which all three glutamic acids in positions 17, 21 and 24 of said sequence are gamma-carboxylated, and

ii) a fragment which spans from amino acid in position 6 to amino acid in position 30 of the amino acid sequence of SEQ ID NO:2, and that all three glutamic acids in the positions 17, 21 and 24 of said sequence are gamma-carboxylated. *osteocalcin what about seq. do antibody binding.*

26 (new). A non-competitive immunoassay for quantitative determination of a gamma-carboxylated osteocalcin fragment comprising contacting a sample containing said osteocalcin fragment with two monoclonal antibodies or recombinant antibody fragments which bind said osteocalcin fragment and detecting bound monoclonal antibody or recombinant antibody fragment, wherein said monoclonal antibody or recombinant antibody fragment has the specificity to epitopes that have been identified on said gamma-carboxylated fragment of osteocalcin, said osteocalcin fragment selected from the group consisting of

i) a fragment which spans from amino acid in position 7 to amino acid in position 30 of the amino acid sequence set forth in SEQ ID NO:2 in which all three glutamic acids in positions 17, 21 and 24 of said sequence are gamma-carboxylated, and

ii) a fragment which spans from amino acid in position 6 to amino acid in position 30 of the amino acid sequence of SEQ ID NO:2, and that all three glutamic acids in the positions 17, 21 and 24 of said sequence are gamma-carboxylated.